



# **TOW BRIDLE**

## **Load Out Kit**

**TB37000A  
TB37000A-B  
USER GUIDE**



For use with AH-64, UH-60, MH-60, H-3, CH-47, MH-47, UH-72A,  
OH-58, and UH-1 series and commercial counterparts

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**\*\* Manual should be printed in color for clarity \*\***

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**Revision Notification**

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Operating limitations are mentioned throughout this manual, the significance of such limitations provide for the safe assembly and operation of the Tow Bridle.

The following are used throughout this manual to emphasize the importance and significance of each operating limitation:

**WARNING** [all caps, bold, and underlined]

**OPERATING PROCEDURE, PRACTICE, ETS., WHICH MAY RESULT IN PERSONAL INJURY OR LOSS OF LIFE IF NOT FOLLOWED CAREFULLY** [bold all caps text]

**CAUTION** [all caps, bold]

**OPERATING PROCEDURE, PRACTICE, ETC., WHICH IF NOT STRICTLY OBSERVED MAY RESULT IN DAMAGE TO EQUIPMENT.** [non-bold all caps text]

**NOTE** [all caps]

An operating procedure, condition, etc., which is essential to emphasize. [normal text]



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## TB37000A Tow Bridle Assembly Instructions

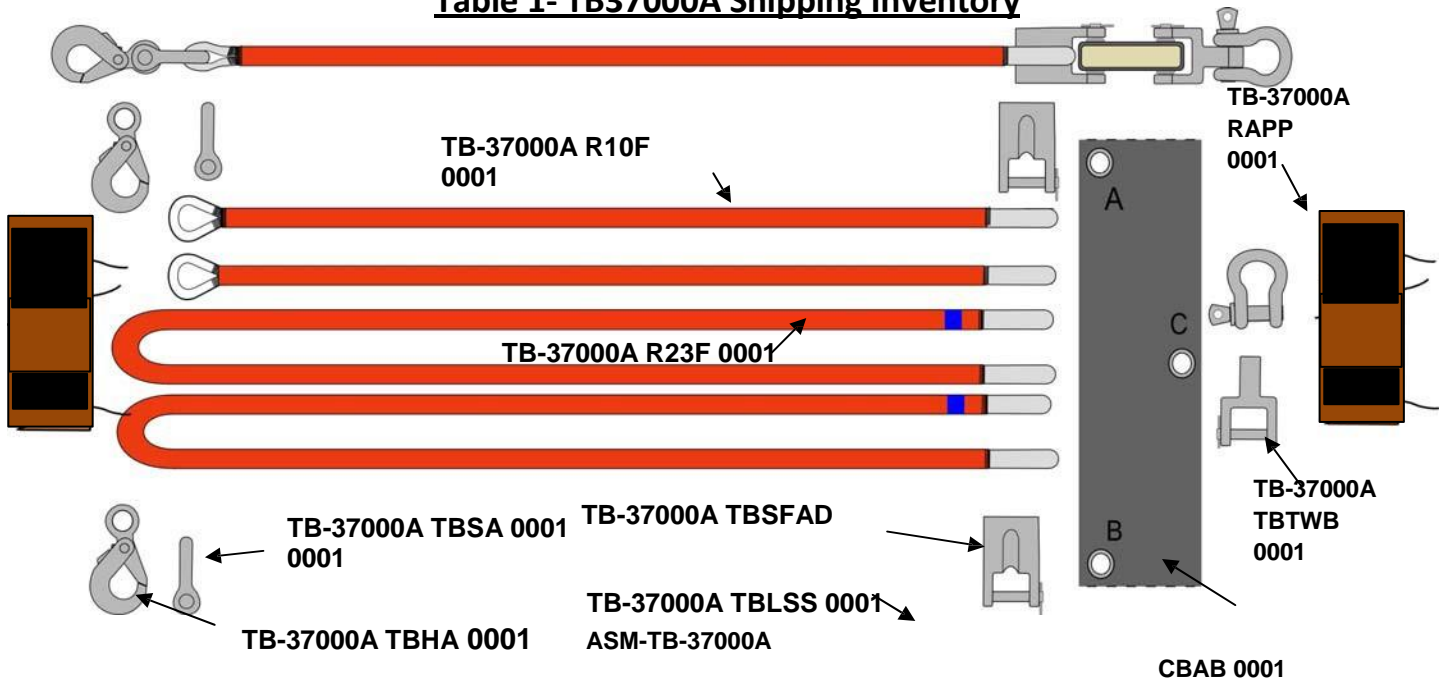
### Section 1 – Tow Bridle Assembly Instructions

#### 1.1-Tow Bridle Inventory

Each TB-37000A should be delivered with the following parts and hardware. To ensure a successful assembly, it is encouraged that the end-user inventories each component.

Part Number/ Description	Qty	Check?
ASM-TB-37000A CBAB 0001 Carbon Fiber Bar w/Alum Bushing	1	
TB-37000A TBSA 0001 Shackle	3	
TB-37000A TBHA 0001 Hook	2	
TB-37000A R23F 0001 Ropes 23 ft	2	
TB-37000A R10F 0001 Ropes 10 ft	2	
TB-37000A TBSFAD 0001 Soft Eye Adapters with Quick Release Pin	2	
TB-37000A TBTWB 0001 Shackle Adapter with Quick Release Pin	1	
TB-37000A RAPP 0001 Rope Airframe Protection Pad	2	
TB-37000A TBSB Steering Bar (3 Sections – 1 Assembly , see pg. 27)	1	
TB-37000A TBSSQRP 0001 1/4" Quick Release Pins for TBSB	2	
TB-37000A TBSSQRP 0002 3/8" Quick Release Pins for TBSB	2	
TB-37000A TBSBSS 0001 Steering Straps for TBSB	2	
TB-37000A TBPP 0001 Spare PIP Pins for Soft Eye and Shackle	3	
TB-37000A TBLSS 0001 Line Support Strap	1	
TB-37000A TBPSB 0001 Pelican Storage Box	1	
TB-37000A TBMCP 0001 Manual and Certificates Package	1	

**Table 1- TB37000A Shipping Inventory**



NOTE: R23F001 Ropes may be identified with either a blue wrap at one end or a green BTU thimble cover.





## **1.2 -ASM-TB-37000A CBAB 0001 Carbon Fiber Board w Alum Bushings**

The ASM-TB-37000A CBAB 0001 Tow Bar can be assembled with either side up as is shown in the picture. Take care to ensure that the adapters are all assembled in the proper orientation and all of the pins protrude through the side that is up during use.

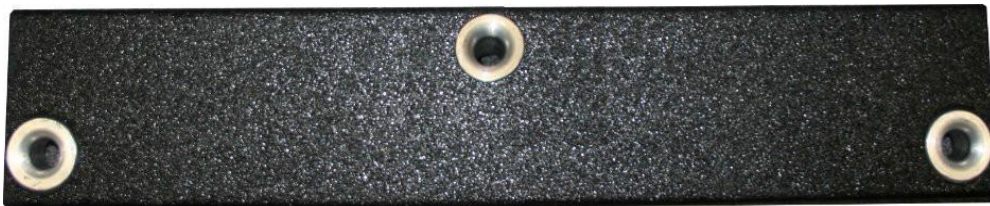


Figure 1: ASM-TB-37000A CBAB 0001 Carbon Fiber Bar w Alum Bushings

**Step 1** -Place the ASM-TB-37000A CBAB 0001 Tow Bar on a flat surface. Orient the parts as shown in (Figure 2). The TB-37000A TBTWB 0001 Shackle Adapter with Quick Release Pin should be placed on the side with the single bushing. The pin with the detent pin should be protruding to the top. Two TB- 37000A TBSFAD 0001 Soft Eye Adapters with Pin should be placed on the side with two bushings. The pin with the Quick Release Pin should be protruding to the top. (Figure 2).





Figure 3: ASM-TB-37000A Tow Bridle correctly assembled without ropes

**CAUTION:** WHEN THE ASSEMBLY IS COMPLETE, MAKE SURE THAT THE ADAPTORS ARE IN THE CORRECT POSITIONS AND THAT THE ATTACHMENT PINS AND QUICK RELEASE PINS ARE ALL ON TOP AS

NOTE: The TB-37000A has been designed to move over the ramp and the floor of the aircraft without catching or snagging. This is only possible when all of the pins are visible from the top of the assembly. Additional Quick Release Pins have been included in the kit to allow for loss or misplacement. The Quick Release Pin must be in place to assure that the TB-37000A performs safely and without loss of one of the adaptors.

**WARNING: DO NOT UNDER ANY CIRCUMSTANCES EMPLOY THE TB-37000A WITHOUT THE QUICK RELEASE PINS IN PLACE TO CAPTURE AND LOCK THE ADAPTORS IN PLACE. DAMAGE TO THE EQUIPMENT OR INJURY TO PERSONNEL MAY OCCUR.**



**Step 2** -Assemble the TB-37000A R10F 0001 10 ft 8in Ropes, the TB-37000A TBSA 0001 Shackle, the TB-37000A TBHA 0001 Hook and the TB-37000A RAPP 0001 Rope Airframe Protection Pad as is shown in (Figure 4)



Figure 4: Rope, shackle, hook and airframe pad assembly

**Step 3** -Assemble the TB-37000A R10F 0001 10 ft 8in Ropes, into the TB-37000A TBSFAD 0001 Soft Eye Adapters with Pin as is shown in (Figure 5).



Figure 5: Ropes assembled into the Soft Eye adaptors

**WARNING: ENSURE THAT THE SHACKLE PIN AND THE SOFT EYE PINS ARE ALL PROTRUDING ON THE TOP TO PREVENT THESE PARTS FROM SNAGGING OR CATCHING ON RAMP SURFACES,**



Figure 6: Complete Tow Bridle assembled and ready for use.





## ***Section 2 – TB-37000A Applications***

### **General Information:**

The Tow Bridle TB37000A is designed to move all types of rolling cargo into the cargo bay of our large cargo aircraft (C130, C17, C5 and Antonov). It can be used with any cargo winching device and can be used to move cargo up to 37,000 lbs in gross weight (on freely rotating wheels).

It can be used with the alloy G100 series 8800 lb WLL hooks connected to the 7 ton capacity alloy shackles or with the 7 ton alloy shackles connected directly to the cargo being winched into the aircraft.

The hooks and the shackles are load rated so that if one line fails, the other will be able to hold the weight of the cargo without loss of position. The following are general instructions on how to load the MH-60, UH-60 from the front and from the tail.

### ***2.1 MH-60, UH-60 Front First Load:***



## Procedure:

- Open the 1770 Pelican container box for TB37000A Tow bridle.
- Remove the two 10' 8" ropes (the longer 23' 0" lines are identified with blue ring band below the lift eyes), two black anodized soft eye adaptors, two alloy screw pin shackles, two yellow G100 series hooks, two protective pads, the Black Carbon Fiber Tow Bar with center front shackle adaptor with an alloy screw pin shackle installed.



Figure 7: Kit Pulled for Front First Load of UH-60

- Insert the small lift eye (the eye without the BTU heavy abrasion sleeve) of each 10' 8" rope into one of the black anodized Soft Eye Adaptors.



Figure 8: Small Eyes in Soft Eye Adaptors

- Using the steel pin of the Soft Eye Adapter, connect the adapter and rope to one of the outside Tow Bar aluminum holes. Repeat the above procedure so both 10' 8" lines are connected with Soft Eye Adapters to the Black Tow Bar.

NOTE: Make sure each Soft Eye Adapter is pinned and locked to the Black Carbon Fiber Tow bar using the 3/16" Pip Pin.



Figure 9: Soft Eye Adaptor on Tow Bar

Using the alloy shackles connect one hook to the end (with the BTU) of each of the 10ft 8in lines. Ensure that the locking lug of the shackle is facing to the outside of the assembly on each side. Stretch the lines out to make sure they are straight. The lines don't twist, so if the lug is on the wrong side, you will have to remove the shackle and reverse the position.

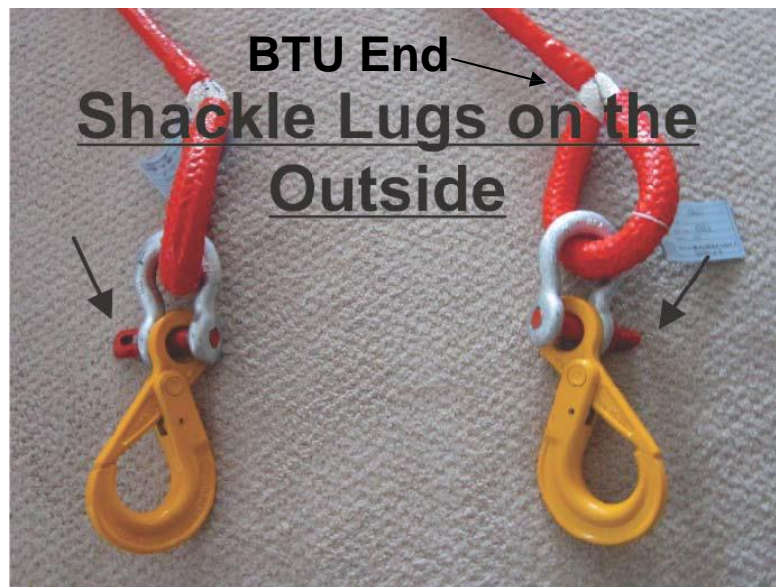


Figure 10: Hooks Installed on the BTU End.



- Each 10.8" line connects to the towing mounting plate as shown in Figure 11 or Figure 12. Figure 12 is the modified foot pedal mount used on the Special Operations MH-60 models.

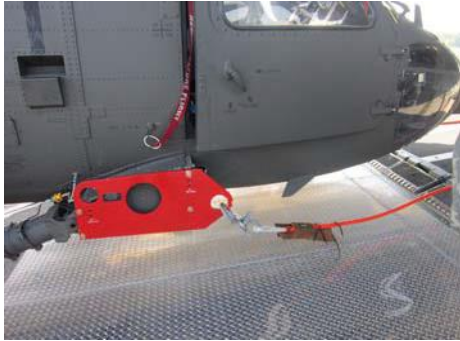


Figure 11



Figure 12

- Attach and adjust the protective pads as necessary.



Figure 13: Protective Pads Installed





### **Walk Around Inspection Before Loading**

- Insure Hooks are attached correctly to aircraft tow fittings.
- Protective pads are in place
- The purple Plasma rope cores are not exposed.
- Tow Bridle is secure to the aircraft winch hook. A/C winch hook keeper is functioning properly
- 3/16" Pip Pins are clearly visible and in place. Pip Pin lanyards are secured with screws to the Soft Eye Adapters and the Shackle Adapter

## 2.2 UH-60 and MH-60 Tail First Load:



### Procedure:

- Open the 1770 Pelican container box for TB37000A Tow bridle.
- Remove the two 23' ropes (the 23' 0" lines are identified with blue ring band below the lift eyes), two black anodized soft eye adaptors, two alloy screw pin shackles, two G100 series hooks, two protective pads the Black Carbon Fiber Tow Bar with center front adapter with an alloy screw pin shackle installed.



Figure 14: Kit Pulled for Tail Load of MH-60 and UH-60

- Insert the small lift eye (the eye without the BTU heavy abrasion sleeve) of each 23' rope into one of the black anodized Soft Eye Adapters



Figure 15: Small Eyes in Soft Eye Adaptors

- Using the steel pin of the Soft Eye Adapter, connect the adapter and rope to one of the outside Tow Bar aluminum holes.
- Repeat the above procedure so both 23' lines are connected with Soft Eye Adapters to the Black Tow Bar. NOTE: Make sure each Soft Eye Adapter is pinned and locked to the Black Carbon Fiber Tow bar using the 3/16" Pip Pin.



Figure 16: Soft eye Adaptor on Tow Bar

Rev E



- Using the alloy shackles connect one hook to the end (with the BTU) of each of the 23' lines. Ensure that the locking lug of the shackle is facing to the outside of the assembly on each side. Stretch the lines out to make sure they are straight. The lines don't twist, so if the lug is on the wrong side, you will have to remove the shackle and reverse the position.

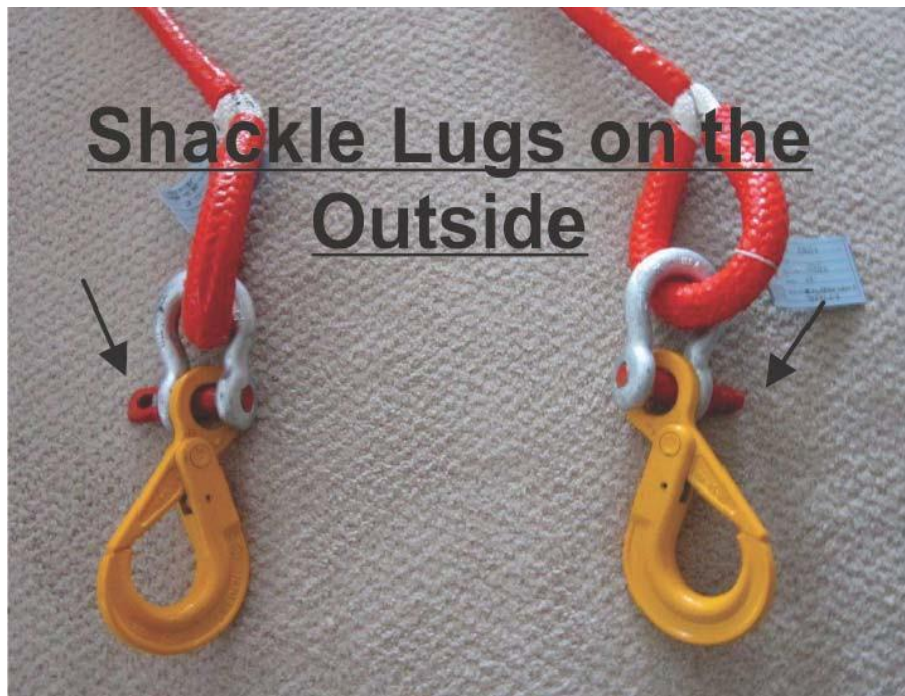


Figure 17: Hooks Installed on BTU End.

- Attach and adjust the protective pads as necessary.



Figure 18: Attach Protective Pad

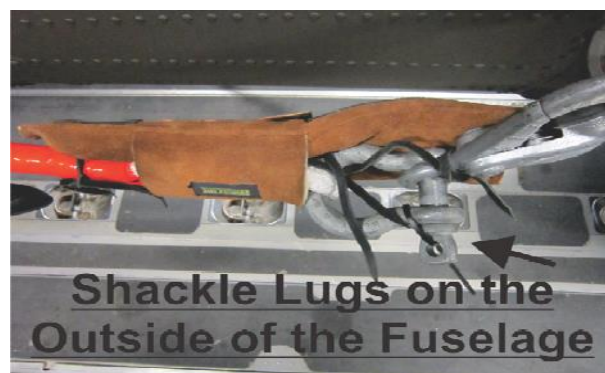


Figure 19: Shackle Lugs on Outside of Fuselage

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- Each 23' line connects to the towing rings as shown below:



Figure 20: Right of the Fuselage



Figure 21: Left Side of the Fuselage

- On the Right side of the fuselage (looking forward from the tail) ensure that you have used the black strap to hold the 23' line above the HF antenna. This is for the sole protection of the HF antenna while using the Tow Bridle to load the aircraft.

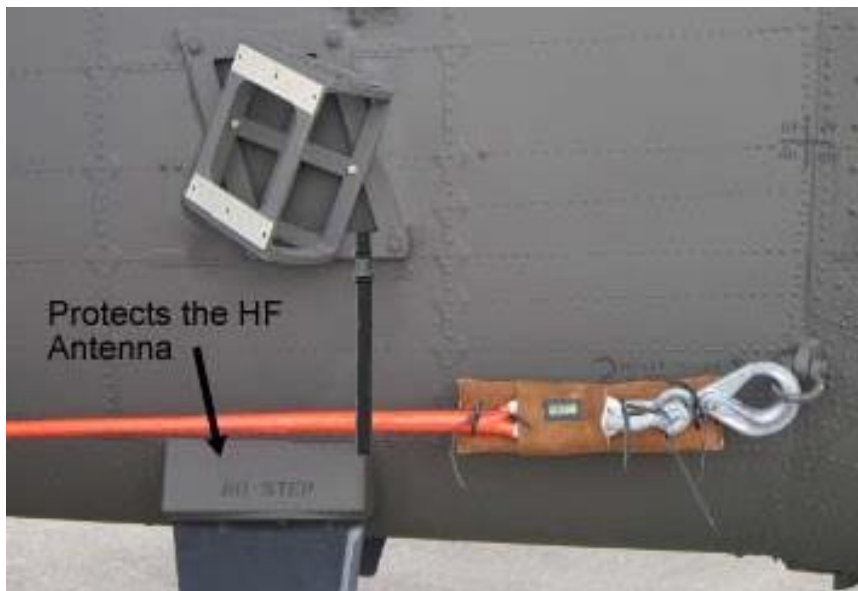


Figure 22: Use the Nylon Strap included in the Kit





## **Walk Around Inspection Before Loading**

- Insure Hooks are attached correctly to aircraft tow fittings.
- Protective pads are in place
- The purple Plasma rope cores are not exposed.
- Tow Bridle is secure to the aircraft winch hook. A/C winch hook keeper is functioning properly
- 3/16" Pip Pins are clearly visible and in place. Pip Pin lanyards are secured with screws to the Soft Eye Adapters and the Shackle Adapter



## 2.3 CH-47 and MH-47 Tail First Load:



### Procedure:

- Open the 1770 Pelican container box for TB37000A Tow bridle.
- Remove the two 10' 8" ropes (the longer 23' 0" lines are identified with blue ring band below the lift eyes), two black anodized soft eye adaptors, two alloy screw pin shackles, two yellow G100 series hooks, two protective pads, the Black Carbon Fiber Tow Bar with center front shackle adaptor with an alloy screw pin shackle installed.



Figure 23: Kit Pulled for Tail First Load of MH-47 and CH-47

- Insert the small lift eye (the eye without the BTU heavy abrasion sleeve) of each 10' 8" rope into one of the black anodized Soft Eye Adapters.



Figure 24: Small Eyes in Soft Eye Adaptors

- Using the steel pin of the Soft Eye Adapter, connect the adapter and rope to one of the outside Tow Bar aluminum holes. Repeat the above procedure so both 10' 8" lines are connected with Soft Eye Adapters to the Black Tow Bar.

**NOTE:** Make sure each Soft Eye Adapter is pinned and locked to the Black Carbon Fiber Tow bar using the 3/16 inch Pip Pins



Figure 25: Soft Eye Adaptor on Tow Bar

- Using the alloy shackles connect one hook to the end (with the BTU) of each of the 10ft 8in lines. Ensure that the locking lug of the shackle is facing to the outside of the assembly on each side. Stretch the lines out to make sure they are straight. The lines don't twist, so if the lug is on the wrong side, you will have to remove the shackle and reverse the position.



Figure 26: Hooks Installed on the BTU End.

- Attach the protective pads as necessary.



Figure 27: Attach the Protective Pad and Ensure the Shackle Lugs are Outside of the Fuselage.



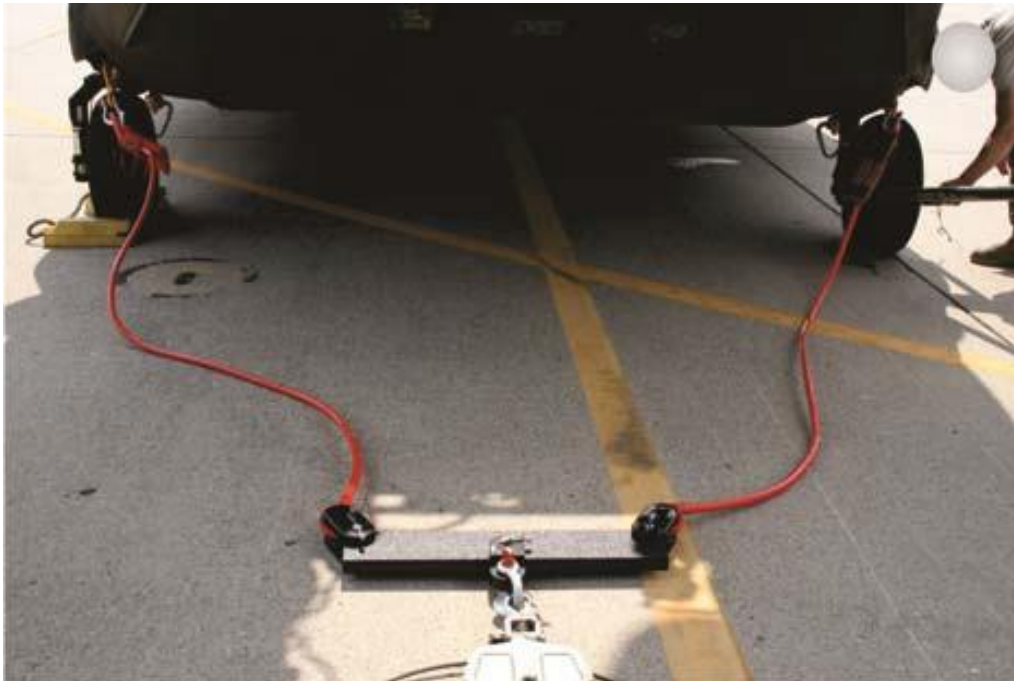


Figure 28: Attach the wheel steering device.



Figure 29: MH-47 Configured and Ready to be Loaded Tail First.



### **Walk Around Inspection Before Loading**

- Insure Hooks are attached correctly to aircraft tow fittings.
- Protective pads are in place
- The purple Plasma rope cores are not exposed.
- Tow Bridle is secure to the aircraft winch hook. A/C winch hook keeper is functioning properly
- 3/16" Pip Pins are clearly visible and in place. Pip Pin lanyards are secured with screws to the Soft Eye Adapters and the Shackle Adapter



## 2.4 Steering Bar for Universal Application of Tow Bridle Kit



- The Tow Bridle Kit comes with a steering bar that can be used with the AH-64, MH-60, UH-60 and the H-3. It comes in two or three pieces which can be assembled with the use of a PIP pin. You can see in Figure 30 that it is easily handled and placed on the tail wheel. Use the 55 inch center extension (not shown) when towing the MH-60, UH-60.



Figure 31: Tow and Steering Bar Assembled and attached to the tail wheel of an AH-64.

Figure 30: Tow and Steering Bar Assembled with guide straps installed.





- The steering bar reduces the required work to direct the Helicopter into the cargo aircraft. It is manufactured of aluminum and with the two ropes from the Tow Bar being used in conjunction; it easily controls the direction of the aircraft as it is being pulled into the cargo aircraft.



Figure 32: Steering Bar being used to move an AH-64.

NOTE: Slide the handle of the Steering Bar into the socket on the yoke and align the red and blue dots to ensure the PIP pin will insert to connect the handle to the yoke.

**USING THE TBSB STEERING BAR FOR *WINCHING* IS NOT AUTHORIZED FOR THE AH-64, UH-60, AND CH-47 AIRFRAMES.**

**THE TBSB STEERING BAR IS FOR STEERING ONLY.**

- The Steering bar attachment points have several positions so that it can fit a large variety of aircraft. The attachment points are movable in and out and held in place with PIP pins. The alignment of the PIP pin to the attachment point is as is shown in Figure 33. The handle of the attachment point should be at 90° to the PIP pin. In the figure, you can see one of the holes for the PIP pin just above the body of the Steering Bar. Note: Both T-Handle and L-Handle type PIP pins are acceptable for use.



Figure 33: Correct Positioning of the PIP pin and the attachment point.



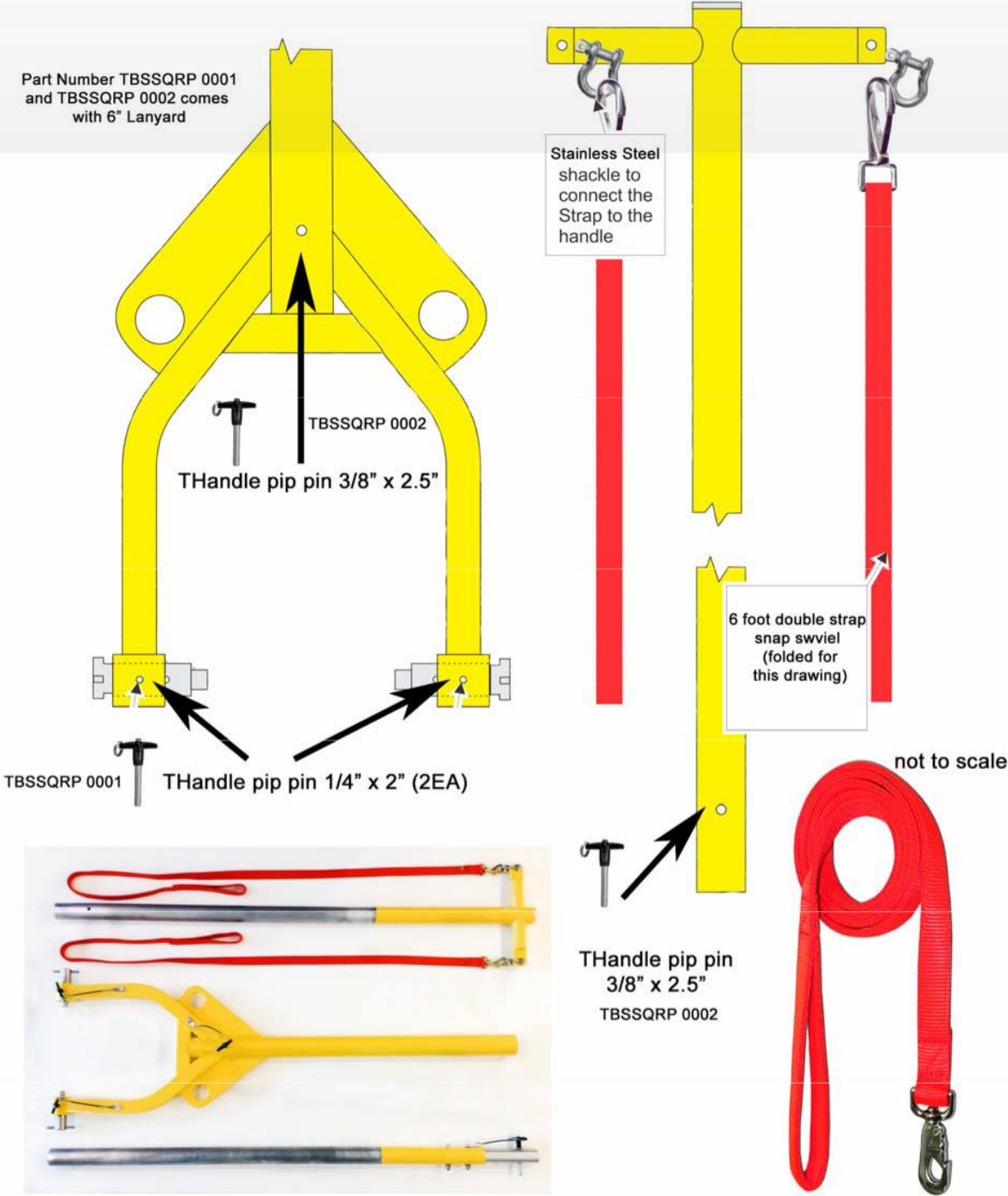
Figure34: Steering Bar with both Attachment Points inserted.

NOTE: All configurations should be properly assembled and all of the PIP pins should be securely inserted before use.

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NOTE: Center section can be used to make steering easier and more precise, space permitting.

Part Number TBSSQRP 0001  
and TBSSQRP 0002 comes  
with 6" Lanyard





## Section 3 – TB37000A Maintenance and Inspection

### 3.1 Maintenance

The TB-37000 has been specifically designed to minimize the needs for maintenance.

- **Shackle Adapter with Quick Release Pin TB-37000A TBTWB 0001 and Soft Eye Adapters with Quick Release Pin TB-37000A TBSFAD 0001:** The aluminum adaptors are anodized to prevent degradation and need only to be kept clean and free of dirt and debris.
- **Carbon Fiber Bar w/Alum Bushing ASM-TB-37000A CBAB 0001:** The Carbon Fiber Bar has been coated with a polyurethane coating to protect it and should be kept free of dirt and debris.
- **Ropes 23 ft TB-37000A R23F 0001 and Ropes 10 ft TB-37000A R10F 0001:** The Ropes have been coated with a polyurethane jacket and the soft eyes have been protected with an abrasion resistant covering. The Ropes should be kept free of dirt and debris.
- **TB-37000A TBSA 0001 Shackle and TB-37000A TBHA 0001 Hook:** The Shackles and Hooks are alloy materials that are designed to take wear under all reasonable applications. The Shackles and Hooks should be kept clean and free of dirt and debris.
- **Rope Airframe Protection Pad TB-37000A RAPP 0001:** The Airframe Protection Pads are made of leather and should be kept clean and free of dirt and debris. The Airframe Protection Pads should be treated periodically with a leather conditioner to increase the lifetime.
- **Steering Bar TB-37000A TBSB:** The Steering Bar is aluminum coated with a yellow Powder Coat. It is designed to be used in all environments. The steering bar should be clean and free of dirt and debris.
- **Line Support Strap TB-37000A TBLSS 0001:** The Lift Line Support Strap (protects M Model antenna) is made out of nylon with a black nylon plastic connector. The strap should be clean and free of dirt and debris.
- **Pelican Storage Box TB-37000A TBPSB 0001:** The storage box should be kept clean and free of dirt and debris.

In all instances, the equipment should be stored in a dry environment and dried prior to storage after use.

**CAUTION:** KEEP THE EQUIPMENT DRY WHILE IN STORAGE; THE LEATHER ITEMS ARE THE ONLY ITEMS THAT SHOULD BE TREATED PERIODICALLY TO INCREASE THE OPERATIONAL LIFETIME.



### **3.2     *Inspection:***

- **Shackle Adapter with Quick Release Pin TB-37000A TBTWB 0001 and Soft Eye Adaptors with Quick Release Pin TB-37000A TBSFAD 0001:** The aluminum soft eye adaptors are anodized to prevent degradation, inspection should be performed to ensure that the adaptors do not display any cracks and the attachment pins move in and out freely. If there are any cracks present, remove the aluminum soft eye adaptors from service.
- **Carbon Fiber Bar w/Alum Bushing ASM-TB-37000A CBAB 0001:** Where the Carbon Fiber Bar has been coated with a polyurethane coating, inspection should be performed to ensure that there are no penetrations, the coating has not been removed down to the carbon fiber. If the coating has been compromised and the carbon fiber is intact replace the Linex coating. If the carbon fiber has been compromised take out of service. If the bar shape has been deformed, take out of service. If any of the aluminum inserts are loose or missing, remove from service.
- **Ropes 23 ft TB-37000A R23F 0001 and Ropes 10 ft TB-37000A R10F 0001:** The pull lines are comprised of three layers of material. The center is the Plasma lifting element. Covering the Plasma is a polyester jacket or sock. Finally the polyester jack is impregnated and cured with two coats of orange Urethane
  - The orange Urethane coating can be cut or chaffed exposing the Polyester jacket.  
NOTE: Depending upon climate the Urethane may become discolored. This does not affect the Tow Bridle's capability and can be wiped off using a citrus cleaner.
  - The Polyester jacket can be cut, chaffed or stained
  - If the Plasma lifting core is exposed below a cut or abrasion the pull line has to be taken out of service and replaced.
- **TB-37000A TBSA 0001 Shackle and TB-37000A TBHA 0001 Hook:** The Shackles and Hooks are forged alloy materials designed to take wear under all reasonable applications. The Shackles and Hooks should be inspected for damage and ease of operation. If they are damaged enough to prevent operation, take out of service and replace.
- **Rope Airframe Protection Pad TB-37000A RAPP 0001:** The Airframe Protection Pads are made of leather; the Airframe
  - Protection Pads should be inspected for damage that prevents protection of the airframe. If severely damaged enough, take out of service and replace.
- **Steering Bar TB-37000A TBSB:** The Steering Bar is aluminum coated with a yellow Powder Coat. It is designed to be used in all environments.
- If the Pip Pin holes become elongated and will not allow the pip pins to maintain their lock, take out of service.





- If the Steering bar welds have become compromised take out of service.
- If the powder coat is damaged or chipped, the Bar can remain in service.
- **Line Support Strap TB-37000A TBLSS 0001:** The Lift Line Support Strap (protects M Model antenna) is made out of nylon with a black nylon plastic connector.
- If the strap is cut or abraded to the point where individual strands are being cut, take out of service.
- If the connector loses its spring to connect, take out of service.
- **Pelican Storage Box TB-37000A TBPSB 0001:** The 1770NF Pelican Case has a life time guarantee. If it becomes unserviceable, return it to manufacturer for replacement.

**CAUTION:** KEEP THE EQUIPMENT DRY WHILE IN STORAGE; THE LEATHER ITEMS ARE THE ONLY ITEMS THAT SHOULD BE TREATED PERIDOCALLY TO INCREASE THE OPERATIONAL LIFETIME.